

that its eggs are unknown, he proceeds to describe the eggs of a widely different Nearctic species, the Spine-tailed Swift, and remarks that he has "reason to believe that eggs of this species are passed off by some dealers for those of the Needle-tailed Swift" (*A. caud-acuta*)—a statement which, if correct, merely tends to show how very easily mere egg-collectors are imposed on by unscrupulous dealers.

No care appears to have been exercised in selecting the proper scientific names, either generic or specific, in accordance with the generally accepted rules of synonymy; and one finds therefore the Killdeer Plover rejoicing in the generic title of *Oxyechus*, the Spotted Sandpiper in that of *Tringoides*, and the Solitary Sandpiper in that of *Rhyacophilus*, whereas, on the other hand, both the Yellow-legged Sandpiper and the Bar-tailed Godwit are classed under *Totanus*.

At pp. 91 and 92 lists are given of the doubtful species which the author considers should be admitted in or excluded from the British List; and here we fail to see, judging from the evidence on record, why *Buteo lineatus*, *Coracias leucocephalus*, *Colaptes auratus*, *Charadrius virginicus* (*dominicus*), *Podilymbus podiceps*, &c. should be admitted, and *Emberiza pusilla*, *Emberiza melanocephala*, *Motacilla viridis*, &c. excluded.

Many other comments and criticisms occur to us as we glance through the pages of this List, but we think that it will be useless to weary our readers with further remarks.

At the end of the List (pp. 97-148) "a few remarks on evolution" are given, and (pp. 150, 151) a "compendious scheme of Reconciliation between the Earth's Record compiled in the Nineteenth Century and the Divine Record delivered to Moses" is given in tabular form; and here, again, we can offer no further comment than that we think it would have been better both for the author and his readers had he studied the subject a little more closely and digested the vast amount of available material before committing his ideas to paper.

MISCELLANEOUS.

On a new Parasitic and Nidulant Rhabdocœlan (*Fecampia erythrocephala*). By M. A. GIARD.

THE curious Turbellarian which forms the subject of this note is very common on the shores of Fécamp and Yport. During a part of its existence it lives parasitically in Decapod Crustacea of various species—*Carcinus mœnas*, *Platycarcinus pagurus*, and *Pagurus Bernhardus*. *Carcinus mœnas* is the most commonly infested, but only when it is young; to find the parasite we must open crabs from $\frac{1}{5}$ to $\frac{1}{3}$ inch broad. The grey or blackish colour of the carapace reveals almost with certainty the presence of the *Fecampia*.

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The parasite is lodged in the general cavity beneath the digestive tube and partly concealed by the liver; it is often folded back upon itself in the form of a U, with the convexity turned towards the posterior margin of the carapace. Sometimes we find two or three parasites in the same crab. In an edible crab 1 inch broad I found eight *Fecampia*; several were concealed in the liver, others had even penetrated into the muscles of the legs. In *Pagurus* the parasite takes up its abode in the abdomen in the midst of the liver, and it is sometimes visible from without through the skin.

When extracted from its host and in an extended state the *Fecampia* may attain a length of $\frac{3}{5}$ to $\frac{4}{5}$ inch. It is a worm with a cylindrical body, attenuated towards the anterior extremity, which is of a fine crimson colour, contrasting strongly with the general colour of the body, snowy white with a faint rosy tint. Two narrow, transparent, lateral lines start from the posterior extremity and ascend to about one third of the length of the body. These lines correspond to the ovarian glands.

The integument is formed by an exoderm of flat, polygonal, vibratile cells, without bacilli, among which open numerous very voluminous cutaneous glands, the function of which will be stated further on. The musculature is formed by annular and longitudinal fibres. These muscles give the body peristaltic movements resembling those of the Nemertians; the muscular layer is, however, very weak, and on the least pressure the contents of the animal flow with the greatest facility.

The buccal aperture is anterior; it leads into a not very distinct pharynx, which is followed by a rudimentary digestive tube.

The nervous system consists of two supracæsoophageal ganglia, united by a commissure and giving origin on each side to two lateral nerves of considerable size.

The whole mass of the body is composed of the generative organs; the smallest rupture of the integument permits the escape of large cylindrical or irregularly ovoid cells, filled with clear vesicles and active corpuscles, which I regard as forming part of the testis. It is to these elements that the snowy aspect of the parasite is due. The ovary is formed by very distinct cellular elements, and is accompanied by a voluminous deutoplasmigene, the cells of which have a rosy colour, due to very regular granulations; the genital aperture is situated at the posterior extremity of the body.

On arriving at sexual maturity the *Fecampia* quits its host and proceeds to crawl freely over the stones in the small pools which the sea leaves full of water when it retires, and in which corallines and *Chatomorpha aerea* grow in abundance. The *Fecampia* does not keep its back upwards, but usually crawls upon one side with the head slightly raised, and describes spirals, like a caterpillar which is spinning its cocoon. In fact, our parasite soon surrounds itself with a thick coat of threads secreted by the cutaneous glands, and producing a regular case, which in form resembles a Prince-Rupert's drop. This cocoon is white, formed by a web, which is rather loose externally, denser towards the body of the animal; its

substance becomes brittle by coagulating in sea-water. It communicates by a narrow neck with the circumambient medium.

When we have once witnessed the formation of these singular cocoons it is not difficult to find them on the lower surface of stones, where they are generally sheltered in the hollows, and often hidden in the midst of the tubes of *Spirorbes*, *Vermilia*, &c.

On opening a cocoon with fine needles we find within it the parasite surrounded by its eggs. The latter are rose-coloured, held together by a gelatinous substance, and lining the inner surface of the posterior part of the cocoon. The *Fecampia* has lost a considerable part of its bulk; the slender anterior part has become much longer and thinner; the body is more rounded and of a reddish colour; the snowy whiteness has vanished, no doubt in consequence of the expulsion of the male products. It is towards the end of August that the *Fecampie* begin to undergo this transformation; it is also at this period that the females of *Carcinus maenas* begin to carry their eggs. The young larvæ of *Fecampia* must therefore be developed in parallelism to the *Zocæ* and *Megalopi*, and infest one or other of them. The eggs have a thin transparent wall and the characters of summer eggs. The segmentation is holoblastic and regular.

I hope soon to complete these observations by the description of the larva. It remains to be seen what becomes of the parasite when oviposition is terminated and it has completed the incubation of the eggs. But it seems to me that the facts indicated in this note deserved being brought without delay under the notice of naturalists.

From the preceding it will be seen that *Fecampia* differs considerably from *Graffilla* and the various genera of parasitic Rhabdocœla previously described. It appears to approach a parasite discovered by Lang in the foot of *Tethys fimbriata*, and I am persuaded that a more complete investigation of that Mediterranean type will show that it also secretes a cocoon.

In conclusion, I will recall the fact that an American naturalist, Charles Girard, many years ago noted in a Planarian (*Planocera elliptica*) a motionless and opaque form which he called a *chrysalis*, and which, perhaps, is not without analogy with the state observed by us in *Fecampia*. In *Planocera*, however, the encystation takes place during the larval period and has nothing to do with the incubation of the eggs.—*Comptes Rendus*, September 13, 1886, p. 499.

Observations on the Pollinization of the Indigenous Orchideæ.

By M. PAUL MAURY.

Referring to a recent paper by M. Léon Guignard on the pollinization of some exotic Orchids, the author states that he has made observations upon the following native species:—*Neottia ovata*, *nidus-avis*; *Orchis fusca*, *simia*, *morio*, *mascula*, *maculata*, *latifolia*, *laxiflora*; *Loroglossum hircinum*; *Ophrys arachnites*, *myodes*, *apifera*; *Platanthera bifolia*; *Cephalanthera grandiflora*; and *Epipactis atrorubens*.